

AMENDMENTS TO THE CLAIMS

1. (Currently amended) A band rejection filter with attenuation poles comprising:

a plurality of series resonant circuits with one set of end terminals having a common connection which is an equipotential node, and another set of end terminals, each connected through via separate transmission lines each having a length that is an odd multiple of about a one-quarter wavelength corresponding to a resonance frequency of the plurality of series resonant circuits; and

a jump-coupling circuit for coupling pairs of non-adjacent series resonant circuits, belonging to the plurality of series resonant circuits, to each other.

2. (Previously Presented) The band rejection filter with attenuation poles according to Claim 1, wherein said jump-coupling circuit includes a capacitor, a transmission line having a length that is an odd multiple of about the one-quarter wavelength at the resonance frequency of the plurality of series resonant circuits, and another capacitor, which are connected in series.

3. (Previously presented) The band rejection filter with attenuation poles according to Claim 2, wherein each of said plurality of transmission lines, said plurality of series resonant circuits, and said transmission line included in said jump-coupling circuit is formed of a microstrip line, a slot line, or a coplanar line, which is formed on a dielectric substrate, and each of said capacitor and said other capacitor consists of a chip capacitor, a gap capacitor formed of a transmission line, or an interdigital capacitor.

4. (Previously Presented) The band rejection filter with attenuation poles according to Claim 1, wherein said jump-coupling circuit includes a high impedance line having a length that is an odd multiple of about the one-quarter wavelength at the resonance frequency of the plurality of series resonant circuits, a low impedance line having substantially the same length as said high impedance line, and another high impedance line having substantially the same length as said high impedance line, which are connected in series.

5. (Previously Presented) The band rejection filter with attenuation poles according to Claim 4, wherein each of said plurality of transmission lines, said plurality of series resonant circuits, said high impedance line, said low impedance line, and said other high impedance line is formed of a microstrip line, a slot line, or a coplanar line which is formed on a dielectric substrate.

6. (Previously Presented) The band rejection filter with attenuation poles according to Claim 1, wherein said jump-coupling circuit includes a capacitor.

7. (Previously Presented) The band rejection filter with attenuation poles according to Claim 6, wherein each of said plurality of transmission lines and said plurality of series resonant circuits is formed of a microstrip line, a slot line, or a coplanar line, which is formed on a dielectric substrate, and said capacitor consists of a chip capacitor, a gap capacitor formed of a transmission line, or an interdigital capacitor.

8. (Previously Presented) A band rejection filter with attenuation poles comprising:
a plurality of parallel resonant circuits each connected through separate transmission lines having a length that is an odd multiple of about a one-quarter wavelength corresponding to a resonance frequency of the plurality of parallel resonant circuits; and
a jump-coupling circuit for coupling two non adjacent parallel resonant circuits, belonging to the plurality of parallel resonance circuits, to each other.

9. (Previously Presented) The band rejection filter with attenuation poles according to Claim 8, wherein said jump-coupling circuit includes a capacitor, a transmission line having a length that is an odd multiple of about the one-quarter wavelength at the resonance frequency of the plurality of parallel resonant circuits, and another capacitor, which are connected in series.

10. (Previously Presented) The band rejection filter with attenuation poles according to Claim 9, wherein each of said plurality of transmission lines and said transmission line included in said jump-coupling circuit is formed of a microstrip line, a slot line, or a coplanar line, which is formed on a dielectric substrate, and each of said capacitor and said other capacitor consists of a chip capacitor, a gap capacitor formed of a transmission line, or an interdigital capacitor.

11. (Previously Presented) The band rejection filter with attenuation poles according to Claim 9, said plurality of transmission lines consist of a rectangular waveguide, each of said plurality of parallel resonant circuits consists of a dielectric resonator that is electromagnetically

coupled, via a coupling hole formed in a wider wall face of said rectangular waveguide, with said rectangular waveguide, said transmission line included in said jump-coupling circuit consists of a jump-coupling waveguide disposed in a narrower wall face of said rectangular waveguide, and each of said capacitor and said other capacitor consists of a coupling hole formed in the narrower wall face of said rectangular waveguide.

12. (Previously Presented) The band rejection filter with attenuation poles according to Claim 8, wherein said jump-coupling circuit includes a high impedance line having a length that is an odd multiple of about the one-quarter wavelength at the resonance frequency of the plurality of parallel resonant circuits, a low impedance line having substantially the same length as said high impedance line, and another high impedance line having substantially the same length as said high impedance line, which are connected in series.

13. (Previously Presented) The band rejection filter with attenuation poles according to Claim 12, wherein each of said plurality of transmission lines, said high impedance line, said low impedance line, and said other high impedance line is formed of a microstrip line, a slot line, or a coplanar line which is formed on a dielectric substrate.

14. (Previously Presented) The band rejection filter with attenuation poles according to Claim 12, wherein said plurality of transmission line consist of a rectangular waveguide, each of said plurality of parallel resonant circuits consists of a dielectric resonator that is electromagnetically coupled, via a coupling hole formed in a wider wall face of said rectangular

waveguide, with said rectangular waveguide, each of said high impedance line and said other high impedance line consists of a narrower and thicker jump-coupling waveguide disposed in a narrower wall face of said rectangular waveguide, and said low impedance line consists of a wider and thinner jump-coupling waveguide disposed in the narrower wall face of said rectangular waveguide.

15. (Previously Presented) The band rejection filter with attenuation poles according to Claim 8, wherein said jump-coupling circuit includes a capacitor.

16. (Previously Presented) The band rejection filter with attenuation poles according to Claim 15, wherein each of said plurality of transmission lines is formed of a microstrip line, a slot line, or a coplanar line, which is formed on a dielectric substrate, and said capacitor consist of a chip capacitor, a gap capacitor formed of a transmission line, or an interdigital capacitor.